
**Automatic identification and data
capture techniques — Bar code print
quality test specification — Linear
symbols**

*Techniques automatiques d'identification et de capture des
données — Spécifications pour essai de qualité d'impression des codes
à barres — Symboles linéaires*



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	2
4.1 Abbreviated terms.....	2
4.2 Symbols.....	3
5 Measurement methodology	4
5.1 General requirements.....	4
5.2 Reference reflectivity measurements.....	4
5.2.1 General.....	4
5.2.2 Measurement light source.....	4
5.2.3 Measuring aperture.....	4
5.2.4 Optical geometry.....	5
5.2.5 Inspection band.....	6
5.2.6 Number of scans.....	7
5.3 Scan reflectance profile.....	7
5.4 Scan reflectance profile assessment parameters.....	8
5.4.1 General.....	8
5.4.2 Element determination.....	9
5.4.3 Edge determination.....	9
5.4.4 Decode.....	10
5.4.5 Symbol contrast (SC).....	10
5.4.6 Edge contrast (EC).....	10
5.4.7 Modulation (MOD).....	10
5.4.8 Defects.....	10
5.4.9 Decodability.....	12
5.4.10 Quiet zone check.....	13
6 Symbol grading	13
6.1 General.....	13
6.2 Scan reflectance profile grading.....	13
6.2.1 Decode.....	14
6.2.2 Reflectance parameter grading.....	14
6.2.3 Decodability.....	14
6.3 Expression of symbol grade.....	15
7 Substrate characteristics	15
Annex A (normative) Decodability	16
Annex B (informative) Example of symbol quality grading	17
Annex C (informative) Substrate characteristics	19
Annex D (informative) Interpretation of the scan reflectance profile and profile grades	23
Annex E (informative) Guidance on selection of light wavelength	26
Annex F (informative) Guidance on number of scans per symbol	28
Annex G (informative) Example of verification report	29
Annex H (informative) Comparison with traditional methodologies	30
Annex I (informative) Process control requirements	33
Bibliography	36

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This second edition cancels and replaces the first edition (ISO/IEC 15416:2000), which has been technically revised with the following changes, as well as minor editorial modifications:

- the computation of “Defects” was modified in this revision of ISO/IEC 15416 (see Note 3 in [5.4.8](#)); and
- sharp boundaries between grade levels are avoided by assigning grades within grade boundaries to the first decimal place (see the Notes in [6.2.2](#) and [6.2.3](#)).

Introduction

The technology of bar coding is based on the recognition of patterns encoded in bars and spaces of defined dimensions according to rules defining the translation of characters into such patterns, known as the symbology specification.

The bar code symbol is produced in such a way as to be reliably decoded at the point of use, if it is to fulfil its basic objective as a machine readable data carrier.

Manufacturers of bar code equipment and the producers and users of bar code symbols therefore require publicly available standard test specifications for the objective assessment of the quality of bar code symbols, to which they can refer to when developing equipment and application standards or determining the quality of the symbols. Such test specifications form the basis for the development of measuring equipment for process control and quality assurance purposes during symbol production, as well as afterwards.

The performance of measuring equipment is the subject of a separate standard, ISO/IEC 15426-1.

This document is to be read in conjunction with the symbology specification applicable to the bar code symbol being tested, which provides symbology-specific detail necessary for its application.

This methodology provides symbol producers and their trading partners a universally standardized means for communicating about the quality of bar code symbols after they have been printed.

Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols

1 Scope

This document:

- specifies the methodology for the measurement of specific attributes of bar code symbols;
- defines a method for evaluating these measurements and deriving an overall assessment of symbol quality; and
- provides information on possible causes of deviation from optimum grades to assist users in taking appropriate corrective action.

This document applies to those symbologies for which a reference decode algorithm has been defined, and which are intended to be read using linear scanning methods, but its methodology can be applied partially or wholly to other symbologies.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

bar reflectance

lowest reflectance value in the scan reflectance profile of a bar element

3.2

decode

determination of the information encoded in a bar code symbol

3.3

edge contrast

difference between *bar reflectance* (3.1) and *space reflectance* (3.14) of two adjacent elements

3.4

element reflectance non-uniformity

reflectance difference between the highest *peak* (3.9) and the lowest *valley* (3.16) in the scan reflectance profile of an individual element or quiet zone

3.5

global threshold

reflectance level midway between the maximum and minimum reflectance values in a scan reflectance profile used for the initial identification of elements